PUBLIC WELFARE *and* PUBLIC UTILITY SERVICE

Bulletin No. 1

A HALF-CENTURY MIRACLE

How the discoveries of yesterday have become the necessities of today and are the foundation of great industries that are interwoven with the every-day facts of daily life

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For use of Debating Clubs, Oral English and Current Topics Classes

Issued by the

ILLINOIS COMMITTEE *on* PUBLIC UTILITY INFORMATION

A HALF-CENTURY MIRAC

You press a button and bright **light** instantaneously floods the house. Did you ever stop to think what is back of that button?

You pick up a telephone receiver and **San Francisco** and **New York** immediately answer your call. Did you ever stop to think that some of the parts of the instrument you are using come from **South America,** the copper from **Northern Michigan, Utah,** or perhaps **Arizona,** and that a veritable army of people are on the job to help you make the call?

You turn a lever and your gas is ready to **cook** the evening meal, **heat** the house and fursource of that light may have been in the coal fields of **Pennsylvania, West Virginia** and **Kentucky** and the oil fields of **Oklahoma?**

You board a street car and some invisible power **moves** it and you reach your destination.

You want to converse with **London** or **Shanghai, China,** and **through the air** without the aid of a wire, or **through cables** under the ocean goes your message to points **thousands of miles away.**

A switch is pushed and great engines, having the force of thousands of horse power start a mill in motion employing **thousands of men.** Did you ever trace the power behind that switch back to **Niagara Falls,** the **Keokuk Dam,** the **Cascade Mountains,** the **coal mines** where nature has stored up **millions of horse power** of energy, or to the brains of the inventive geniuses who furnished the keys that unlocked this treasure?

Why, it was only forty-four years ago, to be exact, that a man rushed pell-mell from a basement in Boston up three flights of stairs, and cried with great excitement, **"I can hear you."** This man's name was Watson. No wonder he was excited. For many weary weeks and months he had been an assistant in the experiments of Professor Alexander Graham Bell.

On this day, through a new instrument, Mr. Bell, upstairs, had called to Mr. Watson, in the basement: **"Mr. Watson, come here! I want you."** And how Watson did come! The **telephone** had been born.

Since 1886 the telephone has been commercially practicable. The succeeding years have brought the development that has put it into almost universal use in the United States as a necessity in **social** and **business life,** particularly business; seventy-five per cent of the total use of the telephone is for business purposes.

About the same time, the electric light and motor and electric street car became usable public servants; that is, Edison, Brush, Sprague and others made them commercially and industrially practicable: the electric light for home, office, factory and street lighting; the electric motor for every power purpose, from running a sewing machine or a farm grindstone to hauling railroad trains, driving steamships and turning all the wheels of manufacturing plants; the electric street car that has solved the problem of [illegible] transportation and has made the large city [illegible] healthy as the open country by abolishing congested slums.

Gas, as a public utility, is somewhat older in years. It was first publicly demonstrated in this country at Baltimore in 1816. But the Welsbach discoveries, which made gas the efficient lighting agent of today, did not come until 1885, and general use of gas, as a fuel in the home and in industry, came still later.

Now, **think a moment.** Suppose by some kind of magic, telephones, street cars, electric lights, gas—all could be made, suddenly, to **vanish.** How would we feel? What would we do? How **could** we get along?

To us of this day these utilities are **necessities.** It is hard to realize how people lived without them only forty odd years ago. They are at our command so easily and so cheaply that we accept and use them as a matter of course—**the commonplace-things of daily life**—without a thought of how they got here. Yet they have not simply "happened;" or, like Topsy, "just growed." The story of their beginnings, their growth and their place in the social, industrial and economic fabric of the nation (which will be discussed in other bulletins of this series) is romance made reality. It is the romance of everyday life, by the realization of which we get to know and understand and appreciate better the times we live in.

Imposing Physical Facts:

To state the merely physical facts of these public utility services is to stagger the imagination. Words and figures that express the material and money and labor they represent are terms almost beyond human grasp. For example:

> Today, the telephone systems in America have strung enough wire to go around the earth 1,400 times, or, 35,000,000 miles wire; they have placed one telephone every seven persons in the country, or 000,000 telephones; over these systems 450,000,000 calls were made in one over ten times the number of people earth.
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> The capitalization of American telephone systems amounts to $1,300,000,000; the employees number 240,000, and the number of bond and shareholders is 190,000.
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> Today, the electric railroad lines have laid in America, tracks enough to circle the earth nearly twice, or 44,000 miles. They serve a population of approximately 50,000,000, or about half of the country's total population. They have carried passengers in one year equal in number to 160 times the population of America, or 16,000,000,000.

...e money invested in these lines totals ...50,300,000; they employ 340,000.

...Today, there are 6,544 electric plants pro...uring 25,438,611,411 Kilowatt hours of electrical energy—13,000,000 horse-power.

That much energy would operate a train of eight coaches and locomotive, similar to the 20th Century Limited, around the earth about 28,000 times. It would drive a train of 50 freight cars, for 185,000 round trips from Chicago to Omaha. It would light a roadway around the earth with "White Way" lighting for a continuous period, day and night, of 7 years, or, such as ordinary street lighting, for 22 years.

There are 8,900,000 homes in this country lighted by electricity, with 161,000,000 lamp sockets.

Yet the electric light was only invented 40 years ago—in 1879—and still probably the youngest of all present-day necessities.

Within a few years, if the present demand for electricity from farmers continues, the farm houses, barns and barnyards will not only be found flooded with electric lights, but threshing, wood sawing, churning and the countless duties of the farm will be done by electricity, not to speak of the 275 uses of electricity now practiced by city housewives ranging from cooking, dish washing, clothes washing, house cleaning, to the heating of curling irons, which will be made possible to the farmer's wife.

Great transmission wires conveying high voltages of electricity, now practically link the nation from ocean to ocean and from the Canadian border to the gulf, gathering up power from the waterfalls and from the central stations en route. Only a few miles of wire are needed here and there to weld them into unbroken trunk lines such as would deliver power from San Francisco to New York.

Already railroads have commenced to electrify their lines, doing away with steam locomotives. **Every passenger train pulled into the city of New Y...k is taken there by an electric locomotive.** G...t freight trains are now being pulled over t... Cascade Mountains in the West by electricity. ...es not seem unlikely but that within the ...of a very few years the entire railroad sys... the United States will be electrified.

...war developed many new uses for elec... one is, increasing the growth of plants ... as 80 per cent; another is, the destruc... insects which usually prey upon plants; ...other, heating beds in hospitals. These but ...st the new uses being developed every day.

...as:

Today the annual production of gas in the United States is about eight hundred billion cubic feet, the gas traveling through 70,000 miles of mains, serving a population of nearly fifty-five millions of people with fuel and light.

While the use for lighting dates back nearly a hundred years, it has been a standard domestic fuel, particularly in the cities, for less than forty years. Recognition of its importance, as an industrial fuel, is of much later date. In fact, gas is only just beginning to come into its own as an important industrial fuel and as an important factor in the conservation of natural resources whereby the energy stored in coal is more fully utilized by converting it into gas and coke instead of straight burning of the coal to produce energy.

Public Service and Public Welfare:

The lines upon which this country developed during the first half-century of its national life were largely determined by invention of the cotton gin and application of steam to rail and water transportation and to manufacturing. Is it too much to say that what we call public utility services have as powerfully affected national development during the last half century, or that they have enlarged life, increased business, multiplied comforts, improved health, spread happiness and aided efficient living? When any one of them ceases to operate normally, the immediate results are inconvenience, personal and community loss and disaster; life itself is even at stake.

When street railway transportation was suspended by strikes in Boston, Denver and Chicago, merchant trade fell off fifty per cent and multitudes of working people, besides those on strike, lost wages because they could not get to work on time or at all. In the Summer of 1919, telephone service in Christian, Shelby and Montgomery Counties, Illinois, was suspended by a strike of operators. In announcing the end of the strike, the Chicago Tribune of Septem...r 19, said that the town residents affected ... learned "that modern life without the telepho... if not impossible, is disastrous," and the Tribu... then recorded six disastrous incidents of t... strike—five deaths and one heavy fire loss ... which might have been averted except for th... telephone strike.

Some Comparisons in the Cost of Living

In view of the intimate relation of these util... ity services to daily life it is interesting to com... pare their cost to the users with the cost of other necessities and to note what a relatively small item this cost is in the total living costs of persons and families.

Food, clothing, shoes, furniture and similar necessities of life, have increased in cost in the last five years from twenty-five per cent to one hundred and ten per cent. The increase in cost to the user of these public utility services has averaged close to ten per cent.

A survey of families having incomes averaging from $1,000 to $2,000 a year has shown that cost of these utility services, now become practically necessities, absorbs only from two and six-tenths per cent to five and twenty-six hundredths per cent of the family expenditure.

In the State of Illinois, according to computations by the Public Utilities Commission in the

Summer of 1919, street car fares on 54.3% of the car lines, the gas rates of 64.7% of the gas companies and the rates of 69.2% of the water companies were either lower than, or the same as they were in 1914. Meanwhile, **the cost of operation of these companies has increased from forty-one per cent to ninety per cent**; the average increase was sixty per cent.

Utilities in Illinois:

In the statistical totals, which embrace the Aladdin-like growth of these public utility services in the United States, this state holds second place. There are in Illinois ninety street railway systems, which represent an investment of $456,200,000. These lines carry two billion passengers a year. This means an average of three hundred and seventeen car trips during the year for every man, woman and child in the state.

The influence of relatively rapid electric street car service in abolishing residential congestion by enabling the inhabitants to live out where they have abundant light and air, is illustrated in the city of Chicago. There one can ride almost thirty-three miles on an electric street car, or almost twenty miles on a still faster electric elevated train, for one fare. The average car ride in that city is six miles. An employee of the railways companies has figured that one can ride 400 miles for the present price of a pound of ham.

There are 240 central electric lighting and power plants representing an investment of $234,700,000. There are 75 gas companies with an investment of $186,500,000. In addition to the Bell system there are 770 telephone companies with investment of $145,000,000.

In Illinois the public utility companies represent an investment of $1,054,603,600.

Who Owns the Utilities:

There are 230,000 separate owners of the public utilities in Illinois. These owners are individuals, firms, banks, insurance companies and the like, which hold the stocks and bonds of the companies operating the utilities. From eighty to eighty-five per cent of these utility owners are residents of the state. The thirteen hundred independent telephone companies, previously mentioned, are owned by thirty thousand investors, eighty percent of whom live in the same town, where the telephone companies, in which they have part ownership, supply service.

These Illinois utilities have 193,000 employes. It is estimated that there are 600,000 others, more or less dependent upon these employes, making a total of nearly 800,000, who get their living from public utility employment. There are 153,600 others employed in the various industries which depend upon the public utilities. These two groups of employes, with their families, represent 1,736,500 people. The wages paid to these employes amount to more than $231,600,000 a year.

These Utilities contribute in taxes annually $10,240,000.

In order to provide for the needs of their communities, the Utility companies must expend in the next five years $450,000,000, or at the rate of $90,000,000 a year. This expenditure, made necessary by the growth in population and by constant demand for better service, is used almost entirely for materials and labor employed in extensions of plant and service, and is in addition to money expended for maintenance and operation of the systems. This vast sum of money must be obtained from the thousands of investors in and out of the State who have confidence in the State's future.

HOW TO USE THIS BULLETIN

Debating—Suggested topics for informal or formal debating:

1—Resolved, That the telephone is of greater necessity than the electric light.

2—Resolved, That Thomas A. Edison gave more to humanity than Alexander Graham Bell.

3—Resolved, That the railroads of the United States should be electrified.

4—Resolved, That the farming community should have the same benefits of utility services as the cities.

Rhetoric, Oral English and Current Topics Classes: Suggested topics for theme writing; oral English and Current Topics discussions:

1—To what extent have the electric light, use of gas and the telephone been factors in developing our community?

2—Could we get along in this modern age without the electric light, gas, telephone and street car?

3—What would happen if we had to go back to the use of kerosene lamps for lighting and horse-drawn rigs for travel?

4—What would the world be were the use of telephones suddenly to stop, electricity and gas to be suddenly shut off and street cars and railroads to cease operating and newspapers to stop printing?

5—An estimate of time saved in a week by the use of telephone and street car.